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ABSTRACT

A five-question Web-based summer school survey was designed to measure student motivation for taking summer classes. Web technology has several advantages, such as no printing, electronic notification, high student access potential, and automatic collection of data in digital form. Notification was sent to all enrolled students (N=19,837) based on registration priority. Responses from 6,940 show that students intend to take summer classes to complete a course sequence, graduate earlier, or to take a class in their major or the core curriculum. Students also cited the desire to take a class in a relaxing atmosphere or to remain in the college area for the summer. Students who did not intend to take summer classes indicated the need to earn money, to take a break, or to attend another college. (Contains 3 tables and 31 references.) (Author/SLD)

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An Internet-Based Summer Student Survey

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A five-question web-based summer school survey was designed to measure student motivation for taking summer classes. Web technology has several advantages, such as no printing, electronic notification, high student access potential, and automatic collection of data in digital form. Notification was sent to all enrolled students (N=19,837) based on registration priority. Students intend to take summer classes plan to complete a course sequence, graduate sooner, take a class in their major or the core, for the relaxing atmosphere, to remain in the area. Students who do not intend to take summer classes plan to earn money, take a break, attend another college.

Abstract

A five-question web-based summer school survey was designed to measure student motivation for taking summer classes. Web technology has several advantages, such as no printing, electronic notification, high student access potential, and automatic collection of data in digital form. Notification was sent to all enrolled students (N=19,837) based on registration priority. Students intend to take summer classes plan to complete a course sequence, graduate sooner, take a class in their major or the core, for the relaxing atmosphere, to remain in the area. Students who do not intend to take summer classes plan to earn money, take a break, attend another college.

Introduction

Summer sessions have been described as "an academic appendage" (Schoenfeld, 1985) and a "stepchild" of the American college and university system (Sayville & Master, 1989). Young & McDougall (1988) point out that summer session is typically not integrated into the institutional mission, but is considered a separate entity without a clear statement of role and purpose.

Universities (a national stratified sample) reported that they offer summer courses for regular degree students, other identifiable groups, to help students make up deficiencies, more fully utilize plant facilities, provide summer employment for faculty, for additional income, to attract new admissions, and to offer special and experimental programs (Young and McDougall, 1988).

Several surveys of students have explored reasons for summer attendance and schedule preference. Based on a sample at the University of Maryland, Patterson (1980) found most students attend to accelerate their academic progress and to make up academic deficiencies. Lee (1996) found students at the main campus of Westchester Community College were taking classes to transfer credit to another institution and to take them in summer rather than in the fall. Kent State University students wanted to make progress toward a degree program (1993); students at the University of Alberta attended summer term to "speed degree completion" (Brook, Chapman & Wright, 1989), and students at Miami University attended to accelerate or maintain progress toward a degree or certificate (Keller, 1982).

Moody (1996) looked at meeting schedules. He surveyed 23 community colleges in Arkansas and found that 13 had two sessions and most classes met four or five days a week. Seventeen colleges offered night classes two nights a week.

Purpose

The purpose of this study was to collect information about student's motivation for attending summer session so that summer curricula and activities can be better structured to meet their needs.

Method

As Babbie (1992) noted, "Survey research is probably the best method available to the social scientist interested in collecting original data for a population too large to observe directly"

(p. 262). Traditional paper and pencil survey methods have been replaced by a variety of techniques including the computer-assisted telephone interview and the electronic questionnaire. The computerized self-administered electronic questionnaire technique can use a disk-by-mail or e-mail where the respondent retransmits the completed survey back to the researcher (Couper & Nicholls, 1998). Such questionnaires "request information electronically from respondents without an interviewer present and where respondents use their own (or their organization's) personal computer (PC) to respond" (Ramos, M., Sedivi, B. M., & Sweet, E. M., 1998). According to Dillman (2000), there is a societal trend toward the self-administration of surveys, and electronic surveys may be even more profound than the introduction of random sampling and telephone surveys (p. 352).

Given that we were under time constraint to provide survey results for planning purposes, the electronic distribution and digital capture of responses was appealing. After a review of available products and considering budgetary constraints, we purchased a web-based survey product called EZSurvey[1].

We designed a five-question web-based self-administered instrument to collect student motivation and basic demographic information. The questions were short, unambiguous, and dealt primarily with current rather than hypothetical situations (see Converse & Presser, 1986; Berdie & Anderson, 1974). The survey asked students for information about the number of credit hours they planned to take in the summer, their reasons for attending (or not attending), their class level, college of major, and number of previous summers attended.

Web-based electronic surveys have many advantages, including the elimination of paper, postage, mail out, and data entry costs, the ability to overcome geographic boundaries, time reduction for delivery and analysis, and reduction in cost relative to sample size (Dillman, p 352-354). The authors of a recent electronic survey reported saving more than $10,000 (Howes & Mailloux, 2000). Web-based surveys can require a response before proceeding, skip questions based on a previous response, and accommodate open-ended questions (Fink & Kosecoff, 1998, p. 31; "Author", 2000), and they enhance data quality (Couper & Nicholls, 1998). The web is

viewed as a "universal platform" relative to proprietary personal computer operating environments (Clayton & Werking, 1998).

On the downside, web-based electronic surveys usually require knowledge of the respondents' e-mail address, that respondents be computer literate and have regular access to e-mail and the Internet, and depend on software and video monitor compatibility. Furthermore, a self-administered survey "must stand on its own" with no one there to answer questions (Jaeger, 1984).

We included software-driven features in the web-based questionnaire. For example, we required a response before proceeding to the next question; we included a transparent automatic skip based on the previous response; we included optional pop-up windows to permit the entry of text remarks to some questions, and we used multi-option checklist items (see Dillman, 2000, and Trochim, 2000, for web-based examples).

We defined the target population as all students enrolled at "X" University in the spring quarter of 2000. We defined the sampling frame as students with a university assigned e-mail address, where the sampling frame is the set of people that have a chance to be selected (see Fowler, 1993). Since all university students are assigned an e-mail address, the sampling frame closely approximated the target population. We used a large sampling frame because it was feasible and because there was no campus precedent for estimating a response rate with web-based technology (since we were conducting the first university-wide web-based student survey). However, a comparison of paper and e-mail surveys for faculty yielded comparable response rates (Schaefer & Dillman, 1998).

We pilot-tested the survey questions, e-mail notification, and web survey technology prior to full-scale participation to insure they functioned as intended. We then sent personalized e-mail notification describing the purpose and confidentiality of the survey to the entire population (N=19,837). The e-mail message contained two hot links, the web address of the survey and an e-mail contact address to report technical problems. We sent the survey notification to students in timed stages by class level during students' priority period for on-line summer registration, followed by a reminder to non-respondents one week later. We deliberately notified students at

their registration period when they are more likely to be aware of their own motivation to attend (see Sheatsley, 1983, p. 203). The survey completion cut-off for analysis was through the day prior to the beginning of summer classes.

Security. The web address for each respondent included a unique personal identification number to insure a maximum of one set of survey data per participant. Participants could access the survey more than once, but we used only their most recent data. These measures reduced the likelihood of unauthorized respondents and of repeated responses from the same individual. We chose to provide participant confidentiality rather than anonymity to permit increased accuracy through database verification of respondent demographics (see Suskie, p. 18).

Results

Speed and Accuracy of Data Summarization

When students completed the questionnaire their survey responses were automatically stored on the web server and were downloaded periodically for analysis. We were able to summarize the raw survey data without additional coding or re-keying. Only open-ended text responses required manual interpretation. We were able to present an initial report of the results a few days after the survey cut-off date.

Response Rate

We received responses from 6,940 students, or 35% of the sampling frame. This rate compares favorably with other recent web-based student survey results (Howes & Mailloux, 32%, University of Oklahoma, 35% versus 15% with paper). The response rate provides overall population estimates at the .05 level within plus or minus 1% (after Rea & Parker, 1997, chapter 7).

Technical Response Problems

Approximately 2% of e-mail notifications were not delivered due to an invalid forwarding address. Some students miss-keyed their forward address while others changed their service provider.

A few students contacted us because their web survey "hot link" did not work. They were advised to "copy and paste" the survey web address into their browser window.

Representativeness of the Sample

While the rate of response exceeded our expectation, the question remained as to how closely the 6,940 respondents compared to the sampling frame of 19,837 students who were enrolled that spring. This was of special interest with the use of new technology and we addressed it in several ways because representativeness is far more important that the number or percent of responses received (see Suskie, p. 69).

Class level. The percent distribution of survey respondents by class level approximated the distribution for the student population in most respects. For example, 28% of survey respondents were seniors compared to 29% in the student population. In general, sample to population class levels were within 2% of one another for all nine class levels, from freshman through doctoral, indicating broad participation in the survey at the undergraduate and graduate levels (See Table 1). Although the goodness of fit of these distributions differed statistically χ^2 (8, N = 6,940) = 47.25, p < .001), they compare favorably with previous summer class level distributions reported by Suslow & Pieper (1969).

College of major. The percent distribution of survey respondents by college approximated the student population in most respects. For example, 23% of survey respondents were business majors compared to 22% in the student population. In general, sample to population comparisons were within 2% of one another for all 14 colleges, from Agriculture to Veterinary Medicine, indicating broad participation in the survey by students across majors (See Table 2). However, the goodness of fit of these distributions differed statistically χ^2 (13, N = 6,940) = 18.86, p < .001).

Intended versus Actual Enrollment in Summer

Fifty-four percent (3,748) of the respondents planned to attend summer, and the percent of respondents who actually enrolled was the same (54%, or 3,761). This difference was not statistically significant χ^2 (1, N = 6,940) = 0.10, p > .05).

While 54% of the sample intended to attend in summer, the percent of the sampling frame (all students enrolled in spring) that enrolled was only 47%, indicating that students who intended to go to summer school were more likely to complete the survey than those who did not.

Intended Summer Quarter Credit Hours

Of all respondents, 46% (3,192) did not plan to attend in summer, 7% (458) planned to take 1 - 5 hours, 13% (897) planned to take 6 - 10 hours, 26% (1,809) planned to take 11 - 15 hours, and 8% (584) more than 15 hours. In total, 54% of respondents planned to attend "X" in summer. (Note that five quarter hours are equivalent to about three semester hours.)

Motivation to Attend

For those students planning to attend in summer, their major reasons included to complete a class or sequence under the quarter system (59%), to graduate sooner (57%), to take a class in their major (45%), the more relaxing on campus in the summer (36%), to remain in the local area (34%), to take a core course (31%), smaller classes in the summer (25%), to take a hard class they could focus better on in the summer (20%), and to take a class they couldn't get during the regular year (20%). Motivation to attend summer to accelerate progress toward degree has been reported in previous research (Suslow & Pieper, 1969; Patterson, 1980; Keller, 1982; Brook, Chapman & Wright, 1989; Kent State University, 1993)

For those students who did not plan to attend, their major reasons for non-attendance included the need to earn money in the summer (48%), the need for a break from college in the summer (41%), having other plans such as travel (39%), graduating soon and not needing summer classes (18%), and attending another college (16%).

Previous Summer Attendance

Most respondents had not attended in previous summers at "X" (61%), while some attended one summer (22%), two summers (10%), or more than two (7%).

A cross tabulation between previous summers attended and class level showed large differences in class level attendance, with only 4% of freshmen attending in the past, and increasing to 68% of seniors (see Table 3).

Discussion

Web-Based Survey Technology

Individuals who frequently use e-mail and have easy access to a web-enabled personal computer are good candidates for e-mail notification and web-based survey participation. Most

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college students have access to e-mail and the Internet at their institution, and often at home as well. For example, households headed by someone with some college experience showed the greatest expansion in Internet penetration of all education levels...rising to 49% in August 2000 (National Telecommunications and Information Administration, 2000).

Advantages. Web-based survey technology provides a standardized system for survey presentation and data collection. Web-based design features can require a response before proceeding, require one or allow multiple choices to a question, automatically skip questions based on a previous answer, include open-ended responses (including pop-up windows for text entry), allow backup, review, and updating of responses, and can include an e-mail address hot link for reporting problems.

Comprehensive web-based packages are available with features that include database management, an e-mail client, forms editor, flow control, and summary statistics.

Web-based surveys are low in cost, accessible from any web-enabled personal computer, can handle a large sampling frame, and provide instant data capture without manual re-entry. Automatic capture of data in digital form bypasses problems with ambiguous handwriting as well as optical scanning errors. According to Clayton & Werking (1998), the web "offers what may be the lowest-cost survey environment, especially for ongoing surveys".

You can distribute information about participation with targeted e-mail containing a hot link web address that brings recipients directly to the survey web site. You can market segment and vary the time of distribution of information about participation.

Disadvantages. The surveyor must obtain access to survey software and the technical competence to administer the survey. An e-mail list of participants is preferred. The respondents need access to a web-enabled personal computer, a factor that can influence both the response rate and the characteristics of the respondents. Surveys on electronic media reduce (or eliminate) personal contact, can be more difficult to read, and require the respondent to open an e-mail message (if e-mail is used). Therefore, response rate and bias are less certain with the new technology.

Summer Survey Summary and Future Direction

Students planned to attend classes in the summer primarily to enroll in specific classes that relate to progress toward degree and progress in their major. Other important reasons given were the relaxing atmosphere and desire to remain in the local area. Neither the availability of specific instructors nor extra-curricular activities were important factors. Consequently, from a student-as-customer standpoint, an institutional goal should be to make the distribution of courses offered meet student curricula needs. This policy will maximize student satisfaction, increase summer enrollment and tuition income, and provide more teaching opportunities for faculty.

More recent summer surveys allow students to request that the university offer specific classes, creating a student-driven (i.e., customer-driven) summer curriculum. For example, in summer 2001, the university offered 49 of the top 50 courses that students requested ("X" University Report, 2001). Increased summer enrollment helps students make progress toward their degree and better utilizes existing facilities during the summer. For example, the University of California system is lowering summer tuition to ease overcrowding during the traditional year (Schmidt, 2000).

Web-based Survey as a Tool for Data Collection

Web-based survey software is a promising research vehicle in the higher education environment for constituencies with universal access to e-mail and an Internet-enabled personal computer. The response rate is high, the respondents constitute a reasonably representative sample, the accuracy of the data is high, and cost of administration is relatively low. New equipment, software, and policy will increase the usefulness of web-based surveys. For example, a recent memorandum from the president of "X" University requires that all employees be provided access to e-mail messages (W. F. Walker, personal communication, February 21, 2001). Note that a "mixed mode" approach can reduce coverage error, where participants without access to the necessary technology receive paper rather than electronic surveys and notifications (Schaefer & Dillman, 1998).

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Footnotes

[1]EZSurvey is a product of Raosoft, Inc. in Seattle, WA, at http://www.raosoft.com.

Table 1

Percent Distribution by Class Level in Sample and in Population

Class Level	Sample %	Population %
Freshman	20	18
Sophomore	18	18
Junior	21	19
Senior and 5th Year	27	29
Other Undergraduate	0	1
First Professional	2	3
Master's	7	8
Doctoral	4	4
Other Graduate	0	1
Total	100%	100%

Table 2

Percent Distribution by College of Major in Sample and Population

College	Sample %	Population %
Agriculture	5	5
Architecture	5	6
Business	23	22
Education	10	10
Engineering	16	15
Forestry	2	2
Human Sciences	6	5
Liberal Arts	20	21
Nursing	2	2
Pharmacy	2	2
Science & Mathematics	9	8
Veterinary Medicine	0	2
Interdisciplinary	0	1
Graduate Undecided	0	0
Total	100%	100%

Table 3

Class Level and Previous Summer Attendance

Class Level	% No Previous Summers	% One Previous Summer	% Two or More
Freshman	96	3	1
Sophomore	80	18	2
Junior	63	26	11
Senior	32	35	33
Other Undergraduate	35	41	24
Master's	41	24	35
First Professional	47	32	20
Doctoral	28	19	53
Other Graduate	40	33	27